HIMCO DUMP SUPERFUND SITE

1. CONSTRUCTION DEBRIS AREA-IMPACT TO ADJACENT PROPERTIES

1.1. GENERAL. This paper has been prepared to summarize potential impacts that the proposed remedial action will have on the residential area immediately adjacent to the Himco Dump Superfund Site. Any remedial response at this site will require some type of action with respect to the "Construction Debris Area." The Construction Debris Area (CDA), as defined in the 1991-1992 remedial investigation/feasibility study (RI/FS), encompasses a large area of residential property. Figure 1 shows the location of the CDA with respect to the landfill proper. Drawing R-1 shows the approximate limits of the CDA and affected properties and owners. The following sections of this paper discuss the impacts in greater detail.

1.2. CONSTRUCTION DEBRIS AREA DESCRIPTION. The RI/FS reports and subsequent documents pertaining to the site delineated an area filled predominantly with non-native soil mixed with construction debris. This area, commonly referred to as the "Construction Debris Area," is located adjacent to the south-central and southwest edge of the landfill proper. A number of trenches were excavated in or near this area to evaluate the type and extent of waste material. The trench locations are shown on Drawing R-1 and the trench logs are provided in Appendix A. A summary of the trench logs is presented in Table 1. (Note that the drawing R-1 refers to "Trench 7&8, Trench 12&13, and Trench 16." The trench logs for these borings have the following designations: Trench No. 7&8, Trench No. 12 & 13, and Trench No. TP-16. In this paper, a "TP-" designation is used when discussing these trenches.)

The data generated during the RI/FS indicates that construction type waste was placed in this area to a depth of over 9 feet below ground surface (Refer to trench logs TL-3, TL-5, TD-1, TD-4, TD-5, TP-7&8, and TP-12&13). Many of the trenches appear to have been terminated prior to reaching the bottom of the waste because leachate or water was encountered and/or the trench sides were caving in. Consequently, the actual depth of waste may be greater than indicated on many of the logs.

Of note is that trenches TD-4, TL-7, and TP-7&8 are located outside of the limits of the landfill and construction debris area as defined in the RI/FS. The logs for trenches TD-4 and TP-7&8 clearly show that a substantial amount of construction debris was encountered. In Trench TL-7, which is the trench located closest to County Road 10, a black plastic bag was encountered at 7 feet below the ground surface. Although no substantial waste was encountered in this trench, the presence of the plastic bag indicates that fill material was potentially placed over a much larger area than identified in the RI/FS.

The waste that was encountered in the trenches was typically comprised of concrete rubble, plastic, cardboard, insulation, wood, glass, bricks, metal, asphalt or petroleum mixture, rubber, and other debris. During the RI, a "hot spot" (an isolated area of highly concentrated contaminants) was identified at the southwestern border of the landfill adjacent to the CDA as shown on Figure 1. An emergency action was undertaken in 1992 to remove this source. Although other hot spots such as this have not been identified, there is the potential for similar areas to exist within the CDA.

In 1995, several boring were advanced near this area as shown on Drawing R-1. Debris was encountered in two of the borings, B-4 and WT116-B. The waste extended to a depth of approximately 6 feet below the ground surface in these borings. Draft logs from these borings are provided in Appendix B.

In summary, the trenching program undertaken during the RI/FS did not fully delineate the depth or areal extent of waste in the CDA. Historic information suggests that the material was placed to fill in previous low areas/wetlands and could cover a larger area than previously identified. Consequently, the interpreted limits of the debris area are approximate and could vary considerably from that shown on the drawing and figure. Drawing R-1 shows a zone of potential impact to the residential properties. This zone illustrates that the limits of the construction debris area are approximate and the actual amount of impacted land could vary considerably.

1.3. REMEDIAL ACTIONS AND IMPACT ON ADJACENT PROPERTIES.

1.3.1. General. Several remedial action alternatives have been developed for the Himco Dump Superfund Site. The alternatives consist of constructing a landfill cap over the landfill proper and the CDA or capping the landfill proper and excavating the waste from the CDA. Either of this alternatives require property acquisition from the land owners south of the landfill. These alternatives are discussed in more detail below.

1.3.2. Alternative No. 1: Capping the Landfill and the CDA. In this alternative, a landfill cover system (as prescribed by State and Federal regulations) would be constructed over the entire landfill including the CDA. The exterior perimeter of the landfill cap would extend onto the residential properties south of the CDA as shown on Drawing R-1. Additional land would be required beyond the limits of the cap for vehicle access, fencing, and right-of-way requirements. Any construction debris encountered during construction outside of the perimeter of the cap would be excavated and relocated under the cover system.

1.3.3. Alternative No. 2: Capping the Landfill and Excavating the CDA. In this alternative, a landfill cover system (as prescribed by State and Federal regulations) would be constructed over the landfill proper. The waste materials in the CDA would be excavated and relocated under the final cover system. The removal of all materials from the CDA will require an extensive excavation which will extend into the residential properties as shown on Drawing R-1. The limits of the excavation may vary from those shown depending on the extent of waste encountered. Additional land would be required beyond the limits of the cap and excavation for vehicle access, fencing, and right-of-way requirements. A summary of the approximate area of land required from each property owner is provided in Table 2. Since both alternatives are dealing with the same area of construction debris, the land requirements are approximately the same. Table 3 provides a summary of the approximate distances from major structures on the properties to the interpreted limits of the CDA. See Figure 2 for a typical cross-section of CDA excavation alternative.

1.4. COST ESTIMATES.

1.4.1. General. Preliminary estimates have been prepared to assess the cost to excavate waste from the construction debris area and then backfill the excavation with

clean soil. Costs were developed for both a three foot excavation and for an excavation that extended to ground water. Both estimates assumed that soil would be excavated to the limits defined by Alternative No. 2 as presented above. Each alternative assumed the waste could be disposed of below the final cover system for the landfill. Disposal of the waste at another landfilling facility would be considerably more expensive and may be restricted due to chemical contaminants. Backfill material was assumed to be obtained from an off-site borrow source.

The cost for excavation and backfill for each parcel of impacted land was estimated for two alternatives. The two alternatives were 1) three foot deep excavation and 2) excavation to ground water. Ground water was estimated at 12 feet below ground surface based on water level measurements collected from monitoring well WT-111A. In August 1995, ground water was measured at approximately elevation 753 in this well. The typical ground surface elevation in the residential area. Ground water fluctuations may result in higher or lower ground water levels over time.

To calculate a volume, the surface area of impacted land from each property owner was multiplied by the respective assumed depth (3 feet or to ground water [12 feet]). This assumption results in vertical sideslopes along the exterior boundaries of the excavation. In actuality, the sideslopes would be graded back to a stable grade. However, for preliminary estimates and considering the unknown nature or the extent of waste, these assumptions are acceptable and allow for a comparison of costs. A summary of the costs of excavating waste and backfilling the resulting hole for each property is presented in Table 2.

FIGURES

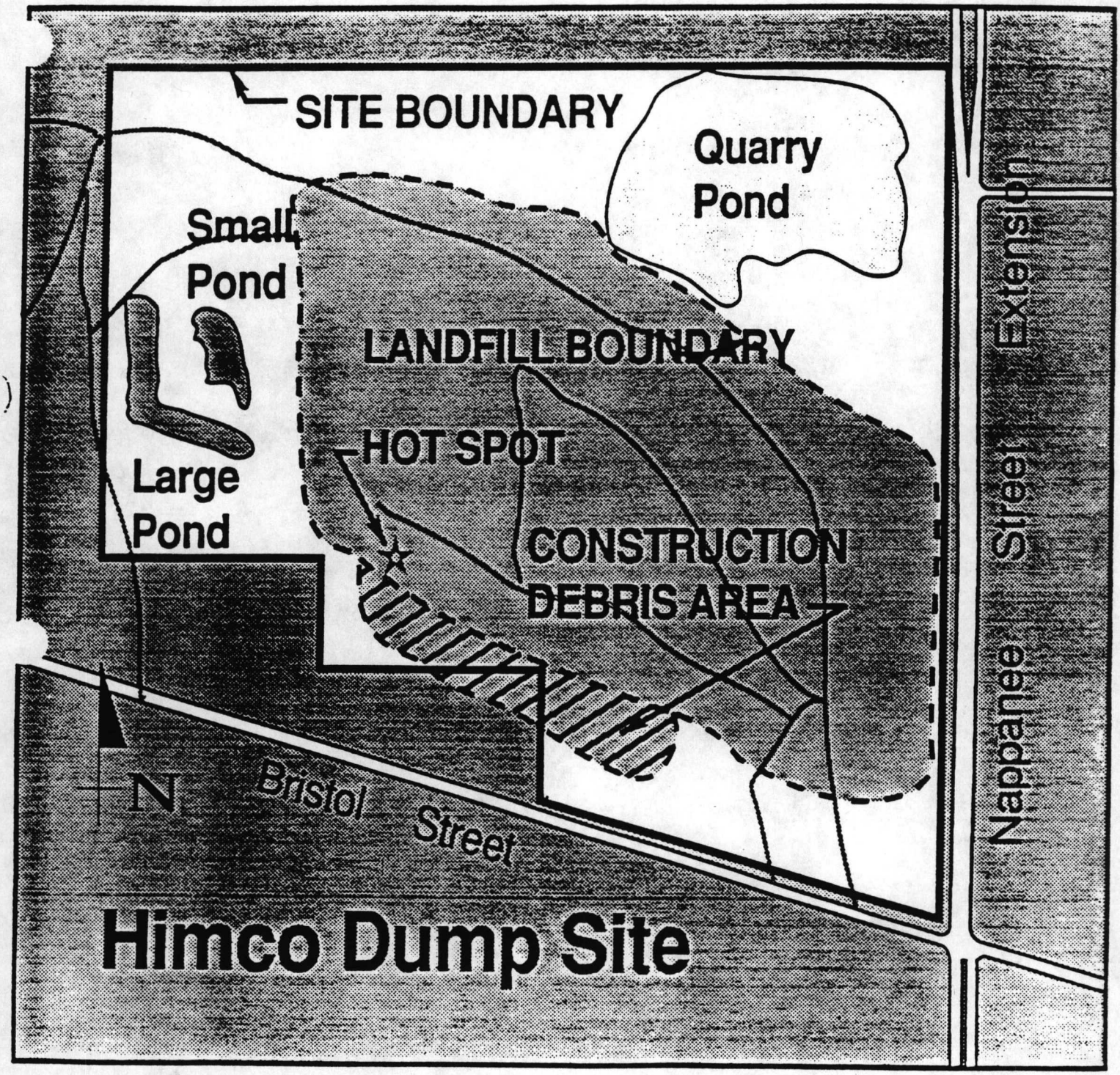


FIGURE 1. GENERAL SITE PLAN

Source: USEPA Record of Decision, Himco Dump Superfund Site (1993).

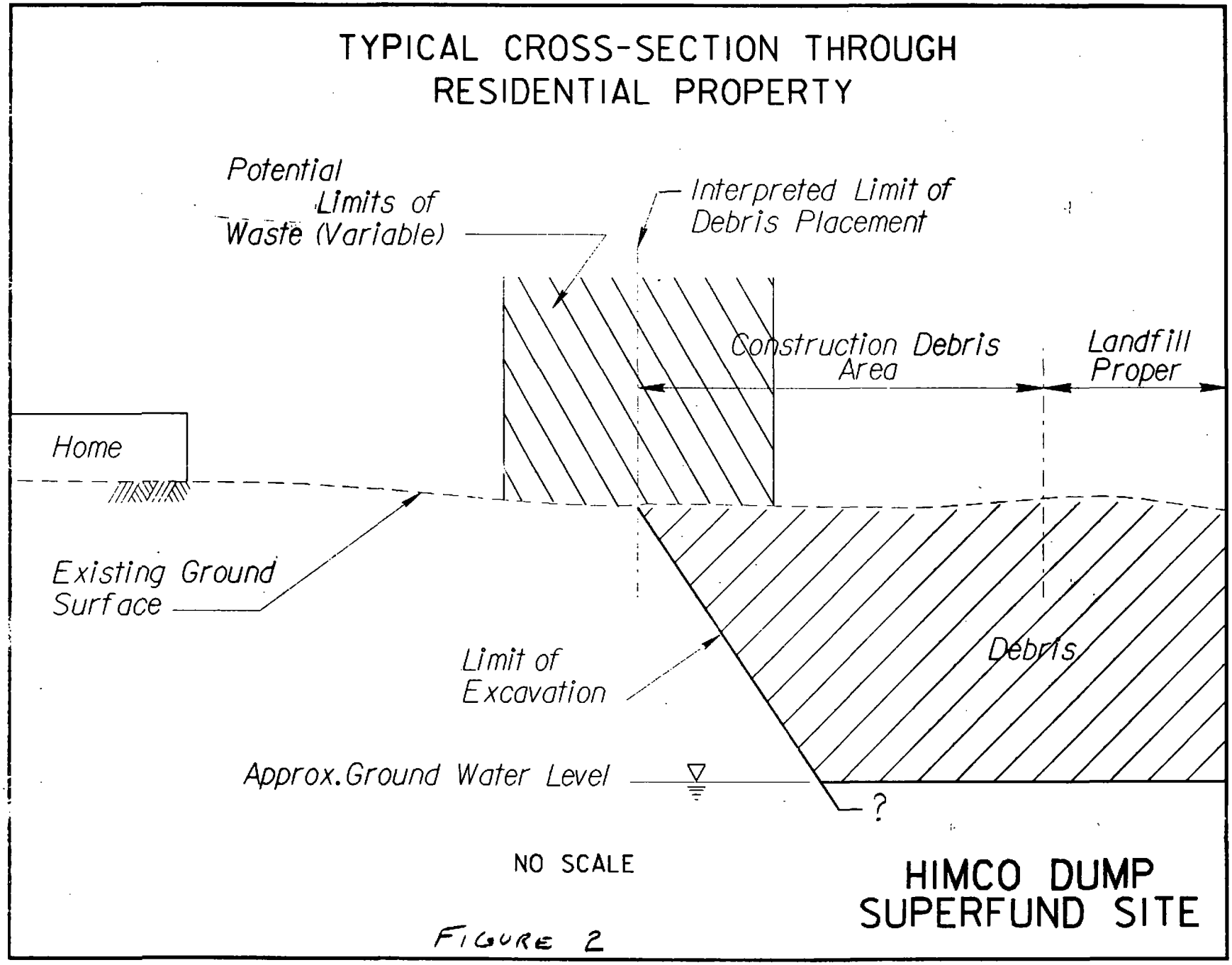

TYPICAL CROSS-SECTION THROUGH
RESIDENTIAL PROPERTY
Potential
Limits of
Waste (Variable)
Interpreted Limit of
Debris Placement
Construction Debris
Area
Landfill
Proper
Home
Existing Ground
Surface
Limit of
Excavation
Debris
Approx. Ground Water Level
?
NO SCALE
HIMCO DUMP
SUPERFUND SITE

FIGURE 2

TABLES

TABLE 1
HIMCO DUMP SUPERFUND SITE

TRENCH LOG SUMMARY TABLE

Trench No.	Debris Depth[1]	Debris Type	Notes
TP-7&8	12+	Constr/Munic	Predominantly construction debris w/ some municipal
TP-12&13	10	CaSO4/Const	Predominantly CaSO4 overlying thin layer construction
TP-16	4+	Constr/Munic	Predominantly construction debris w/ some municipal
TP-17	2+	CaSO4/Constr	Thin layer CaSO4 (1ft) over construction debris
TD-1	9+	CaSO4/Mixed	Thin layer CaSO4 (1 ft) over municipal & construction debris
TD-2	4+	Constr/Munic	Predominantly construction debris w/ some municipal
TD-3	14+	CaSO4/Munic	Thin layer CaSO4 (1 ft) over mix of municipal and sludges
TD-4	11	Constr.	Construction debris mixed with sand
TD-5	9	Constr.	Construction debris with some sand
TD-6	4+	Constr.	Construction debris
TL-2	6+	CaSO4/Mixed	Thin layer CaSO4 (1 ft.) with municipal and some construction
TL-3	11	Const/Sludge	Construction debris mixed with sand, possible sludge
TL-4	5+	Constr.	Construction debris mixed with sand
TL-5	12	Const/Sludge	Construction debris mixed with sand, possible sludge
TL-6	4	Const	Construction debris mixed with sand
TL-7	7+	Sand	Fill sand

[1] Depth below the ground surface in feet to the bottom of waste. Depth may vary within a trench.

TABLE 2
HIMCO DUMP SUPERFUND SITE
SUMMARY OF AFFECTED RESIDENTIAL PROPERTY OWNERS
AND
EXCAVATION/BACKFILL COST ESTIMATES

Property Owner	Approx. Exc. Area (acre)[1]	Approx. Exc. Volume (CY)[2] 3' Excavation	Estimated Cost[3]	Approx. Exc. Volume (CY)[4] 12' Excav.	Estimated Cost[5]
Rumfelt	0.14	700	$10,200.00	2,300	$40,800.00
Klein	0.23	1,100	16,100.00	3,700	64,200.00
Geesaman[1]	0	0	0	0	0
Coulry	0.32	1,550	22,700.00	5,200	90,800.00
Kolanowki	0.37	1,750	25,600.00	5,800	102,300.00
Bowers (1)	0.32	1,550	22,600.00	5,200	90,800.00
Bowers (2)[1]	0	0	0	0	0
Bowers (3)	0.16	750	10,900.00	2,500	43,800.00
Bowers (4)	0.13	600	8,800.00	2,000	35,000.00

NOTES:

[1] Approximate required surface area for excavation only in acres. Actual limits will be defined during excavation due to uncertainty of waste boundaries. Additional area will be required for access, etc.
[2] Approximate volume of excavated waste in cubic yards.
[3] Estimated cost for excavating and backfilling a 3 foot excavation. Assumes waste relocating under cap and construction of cap occurs concurrently with waste removal activities. Relocating waste to another landfill could be considerably more expensive.

Estimated cost of waste excavation and placement under cap = $3.71 per C.Y.
Estimated cost of off-site borrow and placement in excavation = $9.48 per C.Y.

[4] Approximate volume of excavated waste in cubic yards.
[5] Estimated cost for excavating and backfilling a 12 foot excavation.

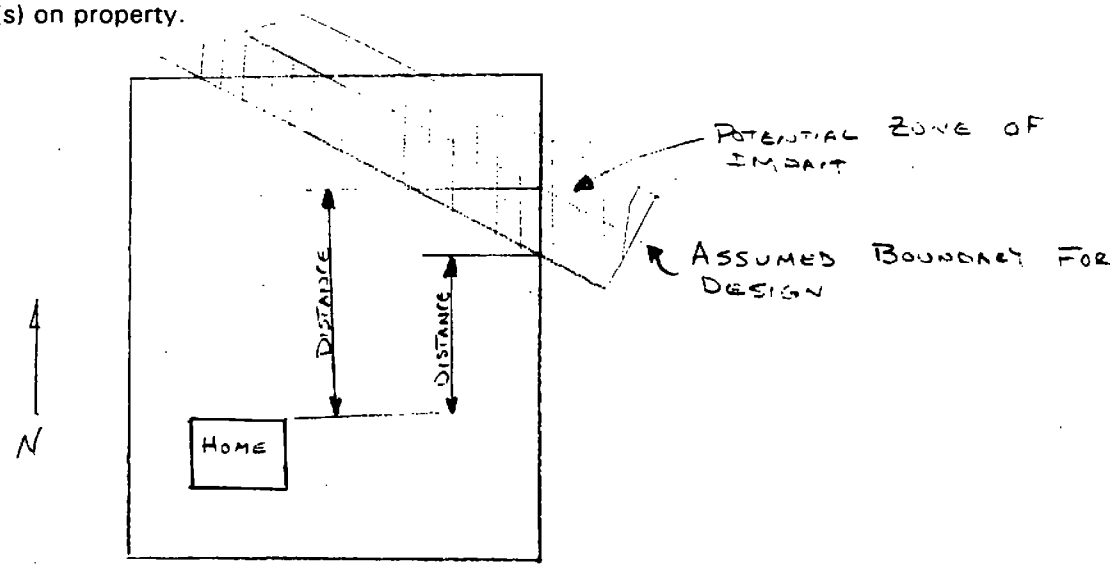
TABLE 3 HIMCO DUMP SUPERFUND SITE APPROXIMATE DISTANCE FROM HOMES TO INTERPRETED EXTENT OF CONSTRUCTION DEBRIS AREA		
Property Owner	**Distance to Southern Edge of Zone of Potential Impacts (Feet)[1]**	**Distance to Assumed Landfill Limits for Design (Feet)[1]**
Rumfelt	70	125
Klein	160	210
Geesaman[2]	N/A	N/A
Coulry[3]	45	100
Kolanowki	30	85
Bowers (1)[2]	N/A	N/A
Bowers (2)[3]	60	N/A
Bowers (3)	40	90
Bowers (4)[2]	N/A	N/A

NOTES:

[1] Distance is measured from the closest major structure on the property to the closest point that the specified boundary crosses the property (See diagram below). Distances from out building(s) not calculated.

[2] Assumed landfill boundary does not cross this property.

[3] Out building(s) on property.



TYPICAL DIAGRAM FOR DISTANCE MEASUREMENTS

NO SCALE

APPENDIX A

SELECTED TRENCH LOGS

TRENCH LOG FORM

Donahue

CLIENT: USEPA-ARCS
PROJECT: HIMCO
PROJECT NO.: 20026.023
DATE: 11/29/90
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: MATHES CHRIS GOODWIN MIKE DONAHUE
LOG BY: TEP
TRENCH NO.: 7 & 8
TRENCH LENGTH: 0 FT TO 50 FT
TRENCH WIDTH: 5 ft.

N TP-7 TP-8 S

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1	2	3	4	5	6	7	8	9	10	DRUM QUANTITY	REMARK NO.
		CaSO4					Metal Pipe						
		thin layer of topsoil											
							Car BUMPER, REFRIGERATOR COMPRESSOR						
	5						SHEET METAL						
		MIXED WASTE - FIBERGLASS TEMPLATES, WOOD, PAPER, AEROSOL CANS-SUDDEN BEAUTY HAIR SPRAY, TRISTAN										HALY	
		TOOTHPASTE SAMPLER, Alka-seltzer wrappers, plastic bags					metal pipe					FEVER	
							DRUM - 25 gallon - CORRODED					SPRAY	
	10	black sand, alka seltzer lids					Matrix of mixed waste						
		BOTTOM OF PIT									BOTTOM OF PIT		
	15												
		DRUM:											
		1 55-gallon • unmarked				3 lids	1 marked Aliphatic Resin						
	20	1 25-gallon + unmarked											
	25												

WATER (YELLOW BROWN SAND)

REMARKS:

TRENCH LOG FORM

[redacted]

CLIENT: USEPA
PROJECT: HIMCO
PROJECT NO.: 20026.023
DATE: 11/30/90
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: MATHES
LOG BY: TEP
TRENCH NO.: 12 & 13
TRENCH LENGTH: 0 FT TO 50 FT
TRENCH WIDTH:

N 12 13 S

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1	2	3	4	5	6	7	8	9	10	DRUM QUANTITY	REMARK NO.
		Ylw brown silty sand top soil fill											
	5	$CaSO_4$ White with some fracture faces yellow											
		wood, paper, sheet metal					sheet metal			Rubber sheets, wood			
▽	10	$CaSO_4$									Bottom		
		Alka-seltzer Wrapper											
	15												
	20												
	25												

REMARKS:

TRENCH LOG FORM

[redacted]

CLIENT: USEPA
PROJECT: Himco
PROJECT NO.: 20026.023
DATE: December 1, 1990
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: TEP
TRENCH NO.: TP-16
TRENCH LENGTH: 0 FT TO 25 FT
TRENCH WIDTH: 5 feet

NW SE

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1 2 3 4 5 6 7 8 9 10	DRUM QUANTITY	REMARK NO.
	0	CaSO4
		Black - wood, paper, bottles, rubber, plastic bags. Trace of sheet metal and metal pipe
	5	
	10	Brownish ylw top soil, fine ground silty sand, roots moist.
	15	
	20	
	25	

REMARKS: Metal - sheet metal - mirror - one sheet, metal gas can from lawnmower with hole in it, two 1" x 2' metal pipes. Shallow groundwater did not allow deeper excavation.

TRENCH LOG FORM

[redacted]

CLIENT: USEPA
PROJECT: Himco
PROJECT NO.: 20026.023
DATE: 12/1/90
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: JMA
LOG BY: TEP
TRENCH NO.: 17
TRENCH LENGTH: 0 FT TO 25 FT
TRENCH WIDTH: 5

W E

STRATA CHANGE OR WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1	2	3	4	5	6	7	8	9	10	DRUM QUANTITY	REMARK NO.
		CaSO4											
		80% rubber sheets and bands, rest - paper, wood, glass, trace aluminum											
		Photo #1											
	5	Ylw brown silty sand (SI7) top soil, roots, moist											
	10												
	15												
	20												
	25												

REMARKS:

TRENCH LOG FORM

Donohue

CLIENT: U.S. EPA
PROJECT: Himco Dump
PROJECT NO.: 20026.023
DATE: 9/10/91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes; Mike Donohue
LOG BY: Kim Elias
TRENCH NO.: TD-1
TRENCH LENGTH: 9deep FT TO 22 FT
TRENCH WIDTH: 7

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT)	DRUM QUANTITY	REMARK NO.
		2 4 6 8 10 12 14 16 18 22		
		Top soil roots numerous 0-9"	0	
	1	0-1' yellow brown sand, poorly graded — by product		
		White, hard powder like — Lime/calcium — Alka Seltzer		
		(red bag - plastic)		
		Brown layer of sand, black plastic bags — blue bags		
	3	wood 1/2" x 6"		
		Garbage Bags — wood		
	4	Black municipal waste, in sand (black) matrix,		
	5	wires, rubber hose, Tide bottle, — cardboard boxes		
	6	Black, solid sand (sp), w/gravel m-lg,		
	7	foam pad — Matrix of black, viscous material (stag)		
	8	(* bubbles) — water flowing in		*
		8.5 ft water in black water to 9', filling hole to 6.8'		
	9			
	25			

REMARKS: Water, leachate, filling in hole, from 8.5 ft to 6.8 ft and rising when hole filled.
Bubbles of gas noted* Avg. OVA 12 ppm in BZ
max 100 ppm approx. 6' in depth

TRENCH LOG FORM

Donohue

CLIENT: U.S. EPA
PROJECT: Himco Dump, Phase II
PROJECT NO.: 20026.023
DATE: 9/10/91
GRID COORD: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes; Mike Donohue
LOG BY: Kim Elias
TRENCH NO.: TD-2
TRENCH LENGTH: 4.5 FT TO 20 FT
TRENCH WIDTH: 7

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT)	DRUM QUANTITY	REMARK NO.
		Top soil, brown silty sand, numerous roots 0-6"		
	1	Sand with gravel small to large / concrete slab 2' x 4' / concrete slab 2' x 3'		
	2	Bricks, rubbel, black sand bricks, concrete		
		Brown sand matrix cobbles, wood, wood logs		
	3	cinder block Beer cans, rubber plywood blue bags		
	4	Wood, 1/2" x 6" black sand?		
		(water at 4 ft) black leachate		

REMARKS: Water at 4 ft - back, no bubbles and not rising
OVA readings averaged 4 ppm throughout excavation, 300 ppm in BZ when water reached

TRENCH LOG FORM

Donohue

CLIENT: U.S. EPA
PROJECT: Nimco Dump Phase II
PROJECT NO.: 20026.023
DATE: 09-11-91
GRID COORD.: START - N_____ E_____ N_____ E_____
END - N_____ E_____ N_____ E_____
CONTROL MONUMENT GRID COORD.: N_____ E_____ N_____ E_____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes; Mike Donohue
LOG BY: K. Elias
TRENCH NO.: TD-3
TRENCH LENGTH: 16 FT TO 14 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 0	1	2	4	6	8	10	12	14	16	DRUM QUANTITY	REMARK NO.
		yellow brown sand (SP) topsoil					0-6" roots					0	
	1	(trace white calcium)											
		trace black soil											
	2	white calcium/lime powder, or					fine material w/ trace black soil						
		bottles					white powder, hard						
	3	~~black soil~~											
		roots,											
	4	mottled white w/ trace					black,						
	6	black, asphalt like material					sand matric - moist.						
		tar like - but not viscus											
	8	mottled white and black,					asphalt like sand base						
		moist, - sludge gray					not solid or hard but						
	10						soft-medium samd (SP)						
		mottled white & black											
	12												
	14	water/leachate, pared in - spotty areas											
		14.5 brown organic base, siltry w/ trace sand - ok											
	25												

REMARKS:

Black asphalt or tar material has sand matrix with bituminous mixture
Water near base 14 ft, spotty & pouring in - slowly. Top soil placed on top of back filled trench
Brown organic material at base = 14.5' - neutral material. The rest was fill.
No debris.
OVA avg. 20-30 ppm in BZ 100ppm max. in BZ.

TRENCH LOG FORM

Canonie

CLIENT: U.S. EPA
PROJECT: Himco Dump , Phase II
PROJECT NO: 20026.026
DATE: 09-11-91
GRID COORD: START - N_____ E_____ N_____ E_____
END - N_____ E_____ N_____ E_____
CONTROL MONUMENT GRID COORD: N_____ E_____ N_____ E_____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes;C.G.
LOG BY: K. Elias
TRENCH NO.: TD-4
TRENCH LENGTH: 15 FT TO 11 FT deep
TRENCH WIDTH:

STRATA CHANGE OR WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1	2	3	4	5	6	7	8	9	10	DRUM QUANTITY	REMARK NO.
		brown sand dry/ glass bottles;100ml/					wood					0	
	1	debris wood /filled white											
		bricks plastic sheets, (pharmacy)					Bottles, glass clear & brown						
	2												
		wood 6"x1/2" plastic sheets,					numerous bricks, wires						
	3												
		sand, content increasaing, occasional debris											
	4												
	5												
	6	sand, brown (SP) fill trace of											
	7	glass, bricks, wood, plastic sheets											
	8												
	9												
	10												
	11	Wet, gray sand - fine to coarse (SW)											

REMARKS:

Water @ 11 ft. Debris 6" to 5 ft. heavy & sand increase beyond 5 ft.
No ova readings at any time.

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump, Phase II
PROJECT NO.: 20026.023
DATE: 09-11-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: K. Elias
TRENCH NO.: TD-5
TRENCH LENGTH: 14 FT TO 9 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT)	DRUM QUANTITY	REMARK NO.
		Dark brown siltry sand, 0-6" topsoil		
	1	trace brick trace wood		
		sand		
	2	metal wire		
		bricks - numerous wood debris, construction debris		
	3	minor sand, bricks wires		
		concrete, bricks wood plastic tubes, under block		
	4			
		wood, dry, little sand matric radiator		
	5			
	6			
	7			
	8			
	9	end of wood & bricks - gray sandy silt		

REMARKS:

house debris, no water noted
no ova readings at any time during this excavation

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump, Phase II
PROJECT NO: 20026.023
DATE: 09-11-91
GRID COORD.: START - N_____ E_____ N_____ E_____
END - N_____ E_____ N_____ E_____
CONTROL MONUMENT GRID COORD.: N_____ E_____ N_____ E_____
ELEVATION, TOP OF TRENCH:

SHEET 1 of 1
EXCAVATOR: Mathes; M. Donohue
LOG BY: K. Elias
TRENCH NO.: TD6
TRENCH LENGTH: 16 FT TO 4.5 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT)	DRUM QUANTITY	REMARK NO.
		brown silty sand w/ garbage: glass, plastic, cans, wood, debris, 0-1.5		
	1	brick		
		1.5 sal., dark brown - black, bricks sand		
	2	concrete wood log concrete trace asphalt		
		rubber flipper trace asphalt blade bituminous sand and gravel		
	4	sand- concrete 4'x3'x3'		
		trace asphalt concrete 4'x3' tire (water pocket)		
	20			
	25			

REMARKS:
pocket of water @ 4' rubbel appeared to decrease or end @ 4.5"
Avg. 10 ppm in BZ, Max of 60ppm in BZ

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump
PROJECT NO: 20026.023
DATE: 09-13-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: K. Elias
TRENCH NO.: TL-2
TRENCH LENGTH: 1.3 FT TO 8.5 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT)	DRUM QUANTITY	REMARK NO.
		silty sand rop soil 0 - 1ft., roots gravel	PPM	
	1		OVA	
		plastic by products 1' thick laues - pushed out		
	2	white line/ calcium carbonate - powder like, hard	30ppm	
		water pouring in at spots @ 2.5 ft & 3ft		
	3	black soil rubbel: bottles, plastic strips, bags, wood		
		cardboards		
	4	waterfill to 4ft., black water, let fill trench pre sampling	60ppm	
	5	black soil: w/ rubbel, wet, rubbel 45% of trench		
			200ppm	
	6	logs		bucket
	7			
	8			
	20			
	25			

REMARKS: Level B. Trench, leachate collection. mills sampling also
OVA Average ~100ppm in BZ
Water filled in from several seap areas int he trench

TRENCH LOG FORM

Ophphus [redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump/Phase II
PROJECT NO.: 20026.023
DATE: 09-12-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: K. Elias
TRENCH NO.: TL-3
TRENCH LENGTH: 15 FT TO 19 FT deep
TRENCH WIDTH: 8'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1 2 4 6 8 10 12 14 15	DRUM QUANTITY	REMARK NO.
		Brown moist. sand with trace silt, roots, topsoil		
	1			
		(SP) fill		
	2	sand, brown, fix - medium , bricks numerous		
		black soil or asphalt and sand mixture		
	3			
		blue/black material - sand mixture w/ gravel		
	4	may have asphalt or petroleum or bituminous mixture in sand		
		mutted, black/brown sand moist.		
	5	metal, drum flattened cobbles, heulters		
	6	moist/wet gray sand (SW) fine - coarse		
	7	builders /wood 1/2' x 6' / logs / bricks/ w/ blk sd.		
	8			*
	9	gray brown sand, moist., trace gravel		**
	10			
	11	no debris		
	12			
	13			
	14			
	15	trace water infiltrating in @15ft (caning in, therefore widen trench)		

REMARKS: * 8ft 20 ppm on OVA - Breathing zone, ** = 100ppm on OVA Breathing zone
collected soil samples @ 2ft & 6ft intervals
bottom at 19ft, could not go deeper, would cave back in & up to 16ft

Leachate sample not collected due to cave in

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump/Phase II
PROJECT NO.: 20026.023
DATE: 09-12-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: K. Elias
TRENCH NO.: TL-4
TRENCH LENGTH: 14 FT TO 6 FT deep
TRENCH WIDTH: 6'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1 2 3 4 5 8 9 10 12 14	DRUM QUANTITY	REMARK NO.
		black brown organic topsoil, silty sand w/ numerous rootlets		
	1			
		sand w/ silt & gravel sark brown/black, numerous bricks, wood		
	2	bricks, wood, metal pipes, debris		5ppm
		concrete slab		
	3	in sand matrix		
	4			
	5	water pouring in @ 5ft, - filled to 4.5		10ppm
		bottom hole 6ft		
	15			
	20			
	25			

REMARKS:

Collected leachate samples & duplicates. Level B protection
Note: water flowed into trench at one spot (6"x4"). The flow was steady till 4.5 ft.

OVA averaged 5-10ppm in BZ.

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump
PROJECT NO.: 20026.023
DATE: 09-13-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: K. Elias
TRENCH NO.: TL-5
TRENCH LENGTH: 15 FT TO 12 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 1 2 3 4 5 6 7 8 9 10	DRUM QUANTITY	REMARK NO.
		brown silty topsoil, roots, gravel tree	WA	
	1			
		rubbel bent drum empty	30ppm	
	2	wood sheetings, plastic debris	=AVG:	
		DRUM		
	3	black, black material, asphalt mixture w/ sand base layer	max=	
		stay like	100ppm	
	4	water seeping in slowly at one spot smashed DRUM		
	5	sandy - brown & black		
	6	leachate filling in - red/brown thick		
	8	water/leachate sand - tan		
	10			
	12	GRAY TAN SD.		
	25			

REMARKS: Leachate collected in level B. Thick red brown (product) leachate, oil sheen, shina.

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump
PROJECT NO: 20026.023
DATE: 09-13-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes
LOG BY: K. Elias
TRENCH NO.: TL-6
TRENCH LENGTH: 15 FT TO 14 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT) 2 4 8 10 15	DRUM QUANTITY	REMARK NO.
		brown silty sand, trace gravel, roots, moist./topsoil	OVA	
	1		20	
		rubbel; black, plastics, cardboards, insulation, sand matrix, black		
	2		B.2.	
		black, plastics, sheets, 1/2" thick, rubbel 80% (water packet)	70ppm	
	3	rubbel		
	4	tan sand		
	5	gray tan sand (SP) f - medium, trace coarse		
		trace gravel		
	6			
	7			
	8			
	10			
	12			
	14			
	25			

REMARKS:

No leachate collected, Rubbel 2-4ft., leachate was seeping in at two areas, slowly. Notsufficient to collect a sample
~~* 70ppm in breathing zone 15ft. from trench~~

TRENCH LOG FORM

[redacted]

CLIENT: U.S. EPA
PROJECT: Himco Dump , Phase II
PROJECT NO.: 20026-023
DATE: 09-13-91
GRID COORD.: START - N____ E____ N____ E____
END - N____ E____ N____ E____
CONTROL MONUMENT GRID COORD.: N____ E____ N____ E____
ELEVATION, TOP OF TRENCH:

SHEET 1 OF 1
EXCAVATOR: Mathes;C.G.
LOG BY: K. Elias
TRENCH NO.: TL-7
TRENCH LENGTH: 17 FT TO 15 FT deep
TRENCH WIDTH: 7'

STRATA CHANGE OF WATER LEVEL	DEPTH	TRENCH LENGTH (FT)	DRUM QUANTITY	REMARK NO.
		(SP) silty sand, brown, damp, roots	0	
	1	(glass bottle)		
		mottled yellow brown (gray sand) reddish brown		
	2			
	3	gray sand, mottled		
	4	light tans sand, f - m fill		
	5			
	6			
	7	plastic bag-black		
	8			
	9			
	10			
	12			
	14	gray, well graded sand		
	15			

REMARKS:

No water in hole, 15ft. deep, sand caved in : 1:1 grade
No leachate sample located

APPENDIX B

SELECTED BORING LOGS

HTW DRILLING LOG

HOLE NO. B-4

1. COMPANY NAME: USACE	2. DRILLING SUBCONTRACTOR
SHEET 1 OF 2 SHEETS	
PROJECT: Himco Superfund Site	4. LOCATION: Elkhart IN
5. NAME OF DRILLER: Alan Oaks + Jim Bosch	6. MANUFACTURER'S DESIGNATION OF DRILL: Gus Pech 1100C
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Gus Pech 1100C Rig; 4 1/4" HSA 3.5" dia 5'; continuous sampler; HNU PI 101 PID; IS TMX 410 CGI	8. HOLE LOCATION
	9. SURFACE ELEVATION
	10. DATE STARTED: 8-28-95 — 11. DATE COMPLETED: 8-28-95
12. OVERBURDEN THICKNESS: 8'	15. DEPTH GROUNDWATER ENCOUNTERED: 7.6' 11:53am
13. DEPTH DRILLED INTO ROCK: 0	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED
14. TOTAL DEPTH OF HOLE: 8'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	with cuttings			Michelle Lenak

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Top soil, roots, moist, dark brown, med. dense	Background				Top vegetation tall grass, weeds
		Poorly graded sand (SP) orange and black 5% gravel, moist, med. dense	HNU 4 units				Trash towards the east about 20 feet - bottles rusted drum, approx. 50 ft. west of WT116A and WT116B
	1		O_2 20.9%				
			LEL 0%				
		Poorly graded sand (SP) 5% gravel, dark brown moist, med. dense, maybe some fines					
	2						
		Poorly graded sand (SP) colors from black, grey, brown, tan and pink pieces of wood up to 4" long, 15% cobbles up to 3" in dia. plastic refuse found - some areas it looks like ashes	BZ				4.2' Recovery
			HNU - 4 units				
	3		O_2 - 20.8%				
			LEL - 0%				
	4						
	5						

PROJECT: Himco Superfund Site — HOLE NO. B

HTW DRILLING LOG

HOLE NO. B-4

PROJECT: Himco Superfund Site

INSPECTOR: Michelle Benak

SHEET 2 OF 2 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	6	Concrete – black asphalt mostly solid, wet	BZ HNU-.6 units O_2 - 20.9% LEL- 0%				rec. = 2' Augers pulled produced a black like sludge
	7	Black, organic type of material, soft, wet, resembles a peat material					11:53 am Water 7.6'
	8						8.0' B.O.H.
	9						
	10						
	11						
	12						
	13						
	14						

HTW DRILLING LOG

HOLE NO. WT116B

1. COMPANY NAME: USACE	2. DRILLING SUBCONTRACTOR
SHEET 1 OF 7 SHEETS	
PROJECT: Himco Superfund Site	4. LOCATION: Elkhart IN
5. NAME OF DRILLER: Joe Morrissey	6. MANUFACTURER'S DESIGNATION OF DRILL: Gus Pech 1100C
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Gus Pech 1100C Rig; 10 1/4 inch augers; 2' 1/4" dia split spoons sampler with 140# hammer for SPT HNU PI 101 PID IS TMX 410 CGI	8. HOLE LOCATION
	9. SURFACE ELEVATION
	10. DATE STARTED: 8-16-95 / 11. DATE COMPLETED: 8-17-95
12. OVERBURDEN THICKNESS: 58.0'	15. DEPTH GROUNDWATER ENCOUNTERED: 2.4' cement may have trapped water
13. DEPTH DRILLED INTO ROCK: Ø	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 8-16-95 12:40pm 9.5' 8-17-95 7:35am 7.6'
14. TOTAL DEPTH OF HOLE: 58.0'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 8-18-95 9:00am 10.9'

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
ONE (1)	X		

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		X		Michelle Renak

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Top soil - vegetated, weeds	Background HNU 2.6 units O_2 20.8% LEL 0%				
	1						
	2						water at 2.4'
	3		BZ HNU - 3.2 units			65	n = 73
	4	cement, conglomerate characteristics, grey with black, moist cobbles up to ~2" in dia. very dense	O_2 - 20.8% LEL - 0%			8	rec = 1.4'
	5					65	

HTW DRILLING LOG

MILE NO. WT 116B

PROJECT: Himco Superfund Site

INSPECTOR: Michelle Benak

SHEET 2 OF 7 SHEETS

DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
8	Poorly graded sand (SP) moist grey, loose fine to med grained			BZ HNU .4 units O_2 20% LEL 0%	1	n=6
9	Organic soil (OL/OH) some roots present, black, moist, medium stiff				3	Rec. 1.4'
10					3	
11						
12						
13						
14	Poorly graded sand (SP) loose, med grained, wet, grey 5% gravel			BZ HNU 1.0 O_2 20.9% LEL 0%	1	n=3
					2	Rec. 1.5'

HTW DRILLING LOG

HOLE NO. WT116B

PROJECT: Himco Superfund Site

INSPECTOR: Michelle Benak

SHEET 3 OF 7 SHEETS

DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
15					1	
16						
17						
18						
19	No recovery			BZ HNU 1.2 units	1	n=2
				O2 20.9%	1	rec. no recovery
				LEL 0%	1	
20						
21						
22						
23						
24	Poorly graded sand (SP) med. dense, grey, med coarse, wet				4	

HTW DRILLING LOG

HOLE NO. WT116B

PROJECT Himco Superfund Site | INSPECTOR Michelle Benak | SHEET 4 OF 7 SHEETS

DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
25	10% gravel	BZ HNU 1.2 units O_2 20.9% LEL 0%			8 12	n=20 Rec. 1.5'
26						
27						
28						
29	Poorly graded sand (SP) grey, wet med. coarse (Same as above)	BZ HNU 1.4 units O_2 20.9% LEL 0%			9 7 3	n=10 rec. 1.41
30						
31						
32						
33						

HTW DRILLING LOG

HOLE NO. WT116B

PROJECT Himco Superfund Site | INSPECTOR Michelle Benak | SHEET 5 OF 7 SHEETS

DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
34	Poorly graded sand (SP) loose (same as above)	BZ HNU 1.6 units O_2 20.8% LEL 0%			1 2 3	Begin 8-12-95 n=5 rec.=1.5
35						
36						
37						
38						
39	Poorly graded sand (SP) loose - (same as above)	BZ HNU .8 units O_2 20.8% LEL 0%			1 3 3	n=6 rec.=1.5'
40						
41						
42						
43						

HTW DRILLING LOG

HOLE NO. WT116B

PROJECT Hirnco Superfund Site | INSPECTOR Michelle Benak | SHEET 6 OF 7 SHEETS

ELEV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	44	Poorly graded sand (SP) med. dense same as above		BZ (Breathing Zone) HNU-2.2 units O_2-20.8% LEL 0%		8	n=15 rec. 1.5'
						10	
	45					5	
	46						
	47						
	48						
	49	(same as above) loose		HNU .8 units O_2 20.8% LEL 0%		5	n=9 rec.=1.5'
						5	
	50					4	
	51						
	52						

HTW DRILLING LOG

HOLE NO. WT116B

PROJECT Himco Superfund Site | INSPECTOR Michelle Berak | SHEET 7 OF 7 SHEETS

DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
53		BZ HNU-2.0 units O_2-20.8% LEL-0%				
54	Poorly graded sand (SP) 5% gravel same as above, coarse grained med.				2	n=7 rec.=1.5'
	Poorly graded sand (SP) fine grained, brown wet, loose				2	
55					5	
56						
57						
58						B.O.H. 58'
	Poorly graded sand (SP) 10% gravel, wet, loose, grey	BZ HNU 1.0 unit O_2 20.9% LEL 0%	D-1		3	n=6 rec.=1.5'
59					3	
					3	
60						
61						
62						

PROJECT Himco Superfund Site | HOLE NO. WT116B